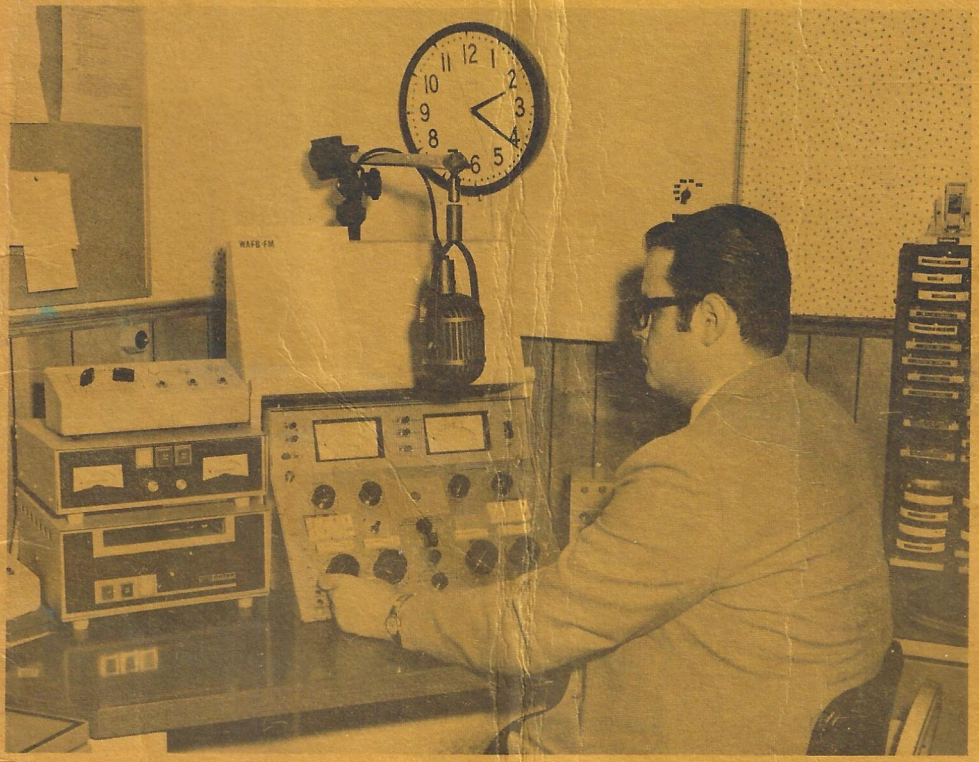
RADIO ANNOUNCER-OPERATOR

STUDY GUIDE:



RADIOTELEPHONE THIRD CLASS LICENSE WITH BROADCAST ENDORSEMENT

$1 POSTPAID

A MID-SOUTH TECHNICAL PUBLICATION

About this book:

You can become a licensed disc-jockey by studying this book! Should you fail the test, your money will be refunded in full promptly! It is our sincere desire to help those who are in search of a new career.

Our study guide may be purchased in quantities. Write for rates.

The cover: disc-jockey George Bonnell at the stereo console of WAFB-FM, Baton Rouge, Louisiana. Photo by Albert V. Tonguis.

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Second Printing, 1971

STUDY GUIDE

FOR THE

RADIO-TELEPHONE THIRD CLASS

LICENSE with BROADCAST ENDORSEMENT

Mid-South Technical Publications
Box 19142
Baton Rouge, Louisiana 70803

INTRODUCTION

This manual is a study guide to help those who are interested in obtaining the Third Class Radio-telephone License with Broadcast Endorsement. The questions in the following pages are similar to those on the actual test. A thorough study and review of these sample questions is all that will be necessary to pass the examination.

The Federal Communications Commission, who makes up and administers the test, has released a list of sample questions. The following questions cover the FCC questions with some repetition to make sure that you know and understand the necessary material to pass the test.

The FCC test consists of three sections of 20 questions each, and the value of each question is five points. A minimum of 75 points, or 15 questions right, on each section is necessary to pass. An example of the type of question is:

Boston is a:
a) City
b) State
c) Ocean
d) None of the above

and the answer is "a."

The third class license which you will receive as a result of this examination will permit you to operate the station and make minor adjustments only. Any major adjustments or repairs must be made by a person holding a radio-telephone second class, or first class, license, depending on the type station.

This study guide is guaranteed to prepare you to pass the examination. If you do not pass the examination, just mail back this manual and the FCC notice of failure, and your money will be refunded in full.

In the back of the manual is a list of FCC offices that will mail you the application and advise you dates and locations for the test that are nearest you.

ELEMENT ONE

Q. Where and how are FCC licenses and permits obtained?

The proper application forms may be obtained by mail from the FCC office for the district in which you live. The forms are completed and presented with the fee to the FCC office. Most FCC offices have regularly scheduled dates for their examinations and should be contacted for this schedule. A list of the addresses of the FCC offices is in the back of this book. Choose the one nearest you.

Q. When a licensee (the one holding the license) qualifies for a higher grade of FCC license or permit, what happens to the lesser grade license?

The old license will be cancelled upon issuance of the new license.

Q. Who may apply for a FCC license?

Normally, commercial licenses are issued only to U.S. citizens and nationals.

Q. If a license or permit is lost, what action must be taken by the operator?

The FCC must be notified immediately. An application form for a duplicate license must be filed. The circumstances of how the license was lost must be stated and that a reasonable search has been made. In the meantime, the operator should post a carbon copy, or duplicate, of the application in place of the lost license. If the original license is later found, it should be submitted to the FCC for cancellation.

Q. What is the usual license term for radio operators?

5 years.

Q. What government agency inspects radio stations in the U.S.?

The Federal Communications Commission (FCC).

Q. When may a license be renewed?

It should be renewed in the last year, which is the fifth year. (After it expires, there is a one year period of grace in which it may also be renewed.)

Q. Who makes entries into the station logs?

Whoever is qualified and has been instructed to fill them out and has actual knowledge of the facts.

Q. Is it necessary for the operator to sign the program or operating log when he goes on duty and then again when he goes off duty?

Yes. He should sign them both times.

Q. Who corrects errors in the station logs?

Program Log: the correction should be made by the operator in charge of the log. If they are made by someone other than he, the operator must date and initial the correction to show that the program log is a true record of what was broadcast.
Operating Log: corrections are made only by the one making the original entry prior to signing off duty. If the date of the correction is different, then a statement must accompany the log explaining the circumstances.
Maintenance Log: All correction must be initialed and dated by the one who made the entry. If the date is different or if the corrector is different, a signed statement should be attached to the log.
All logs should be corrected by the one making the original entry.

Q. How may errors in the station logs be corrected?

By drawing one line through the erroneous entry, initialing the correction and dating it.

Q. Under what conditions may a message be rebroadcast?

No broadcast station shall rebroadcast the program, or any part thereof, of another broadcasting station without the permission of the originating station.

Q. What messages and signals may not be transmitted?

No licensed operator shall transmit unnecessary, unidentified, or superfluous (not necessary) signals, obscene, indecent, or profane words, or meaning, or any call letter which has not been assigned.

Q. May an operator deliberately interfere with any radio communication or signal?

Never under any circumstances. It is unlawful.

Q. What type of communication has top priority in the mobile radio service?

All distress calls, messages and traffic have top priority. Second priority is "urgent" messages.

Q. What are the grounds for suspension of operator licenses?

a) He has violated any provision of any Act, treaty, or convention that is binding on the United States, which the Commission is authorized to administer, or any regulation made by the Commission,
b) He has failed to carry out a lawful order of the master or person lawfully in charge of the ship or aircraft on which he is employed,
c) He has willfully damaged or permitted radio apparatus or installations to be damaged
d) He has transmitted unnecessary radio communications or signals or communications containing profane or obscene words, language, or meaning, false or deceptive signals, or a call letter which was not properly assigned,
e) He has willfully or maliciously interfered with any other radio communications or signals,
f) He has obtained or attempted to obtain an operator's license by fraudulent means.

Q. When may an operator divulge the contents of an intercepted message?

Only if it is being delivered to the person authorized to receive it or if it is for use of the general public (weather bulletins, etc.).

Q. If a licensee (the one holding the license) is notified that he has violated an FCC rule or provision of the Communications Act of 1934, what must he do?

Within ten days he must send in duplicate a written answer to the office originating the notice stating the circumstances and any other information he feels is relevant. If he cannot send the answer in ten days due to sickness, the answer must be made as soon as possible stating the reason for the delay. The letter should not contain any references to previous letters but must be complete in itself and must state any corrective measures which are being taken so that the violation will not recur.

Q. If a licensee receives a notice of suspension of his license, what must he do?

Within 15 days after actually receiving the notice he may file for a hearing if he feels that it is unfair. He can continue to operate with his license until after the hearing. The license will remain in force until the hearing is over and a decision is made. If the suspension is justified, then the operator must mail in his license at the end of the 15 day period, or if the hearing confirmed the suspension, a date will be set by the hearing for the suspension.

Q. What are the penalties provided for violating a provision of the Communications Act of 1934 or a Rule of the FCC?

For violation of an Act: $10,000 or imprisonment for not more than one year or both.
For violation of a Rule: $500 a day during which the offense occurred.

Q. Define "harmful interference."

Any emission, radiation, or induction which endangers the functioning of a radionavigation service or of other safety services, or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the Regulations.

ELEMENT TWO

Q. What should an operator do when he leaves a transmitter unattended such as at the end of the broadcast day?

The transmitter should be made inaccessible to unauthorized persons. It should be locked and turned off.

Q. What are the meanings of: clear, out, over, roger, words twice, repeat and break?

CLEAR: The whole message or conversation is finished and no response is expected.
OUT: Means the same as clear.
OVER: Means my transmission is ended, and I expect a response from you.
ROGER: Means I have received all of your last transmission.
WORDS TWICE: Means say each word twice.
REPEAT: Means to send the preceeding word, phrase, or message once again.
SAY AGAIN: Means the same as repeat.
WILCO: Means that your last message is received and understood and will be complied with.
SPEAK SLOWER: Means please speak more slowly.
BREAK: is used to separate parts of a message.

Q. How should a microphone be treated when it is used in a noisy location?

When there is much background noise and this noise partially drowns out the announcer's voice, it helps to cup your hands around the microphone to help keep out some of the noise.

Q. Is there anything to be gained by shouting into the microphone?

No. Microphones of broadcast quality are designed to put out a low distortion signal when the announcer uses his normal talking voice and has the microphone the prescribed distance from his nouth, which usually is about six inches. When one shouts into the microphone, the distortion can make the announcer's voice complelety unintelligible.

Q. When using a two-way radio, why must the transmitter be "off" if and when messages are not being transmitted?

Even though no one may be speaking into the microphone, if the transmitter is "on transmit" the transmitter is still broadcasting a signal called the "carrier," and this carrier canproduce interference to others who are trying to use the channel.

Q. Why should a radio operator use well known words and phrases?

If the operator does use well known words and phrases, he will be more easily understood and will not have to repeat the message.

Q. Why is the station's "call sign" transmitted?

Each station has a different call sign, and when a station uses his call sign, it officially identifies his station.

Q. Where does an operator find specifications for obstruction marking and lighting (where required) for the antenna tower(s) of a particular station?

He should look on the station authorization license which the FCCissued to the station.

What should an operator do if he hears profanity being used at his station?

He should take the steps necessary to immediately remove the profanity from the air, warn the speaker, and then should report it to the one who is the licensee of the station.

Q. When may an operator use his station without regard to certain provisions of his station license?

Only when a disaster or state of emergency exists.

Q. If a disaster or state of emergency does exist and the station is used contrary to normal, who and when should the operator notify?

The station should notify the FCC Engineer in Charge of their district when it begins emergency communications, and again when it resumes normal communications are resumed.

Q. Who bears the responsibility if an operator permits an unlicensed person to speak over his station?

The operator on duty is still responsible.

Q. What is meant by the "phonetic alphabet?"

When transmitting difficult words and initials using radiotelephone transmitters, it is sometimes necessary to spell them. Instead of saying the letters, words standing for the letters are used. If you had to spell the word "helm," instead of saying," H...E...L...M," you would say, "Henry, Edward, Lincoln, Mary."

Q. How does the licensed operator normally exhibit his authority to operate the station?

He posts his license or permit at the transmitter control point.

Q. When testing two-way communication transmitters on the air, what precaution should be taken?

When the transmitter is to be tested, the operator should first listen on his channel to see that no one is using it. If no one is using the channel, the operator should give his call letters and say that he is testing. All tests should be as short as possible so the channel can be used by others.

Q. What is the purpose of "testing" the transmitter on the air?

The operator is just making sure that the equipment is operating properly.

Q. What class of license is necessary to make transmitter repairs or frequency adjustments?

A first class or second class license, depending on the station. Under no circumstances may a third class operator make frequency adjustments or transmitter repairs.

ELEMENT NINE

Q. Define the following words and phrases:

Standard broadcast station--means a licensed radio broadcasting station whose radiotelephone emissions are primarily intended for reception by the general public on a channel that is in the standard broadcast band.

Standard broadcast band--means the band or range of frequencies from 535 to 1605 kilocycles.

FM station--means a station employing frequency modulation in the FM broadcast band.

FM broadcast band--means the band of frequencies from 88 to 108 megacycles.

Daytime--means the period of time from local sunrise to sunset.

Nighttime--means the period of time from local sunset to midnight local standard time.

Broadcast day--means the period of time between local sunrise and 12 midnight local standard time.

EBS--stands for the Emergency Broadcast System which consists of broadcast stations and inter-connecting facilities which have been authorized by the FCC to operate in a controlled manner during a war, threat of war, state of public peril or disaster, or other national emergency.

Radiotelephone emission--means a radio signal that transmits voice communications. This includes broadcast stations and two-way radio communications.

Q. Make the following transformations:

Kilocycles to cycles: multiply by 1000.
Example: 1.570 kilocycles is 1,570 cycles.

Kilovolts to volts: multiply by 1000.
Example: 7.350 kilovolts is 7350 volts.

Milliamperes to amperes: divide by 1000.
Example: 250 milliamperes is 0.250 amperes.

Megacycles to cycles: multiply by 1,000,000.
Example: 88 megacycles is 88,000,000cycles

Q. What are the units of voltage?

Volts and kilovolts.

Q. What are the units of current?

Amperes and milliamperes.

Q. What kind of meter reads voltage?

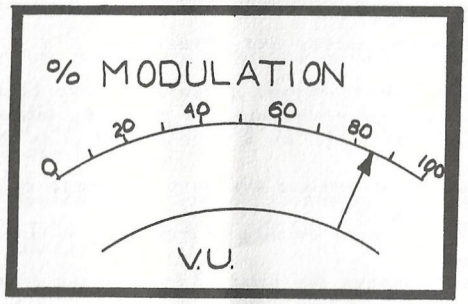
A volt meter. The word volts or kilovolts is printed on the meter.

Q. What kind of meter reads current?

An ammeter. Amperes or milliamperes is printed on the meter.

Q. Draw the "face" of the different types of meters and be able to read each. (Volt, amp, kilovolt, milliamp and frequency meters.)

Modulation Meter



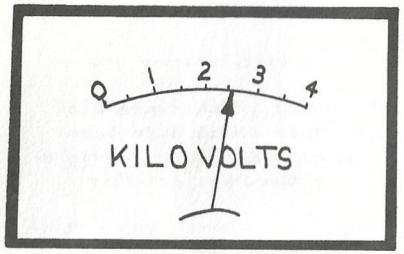


Plate Voltage

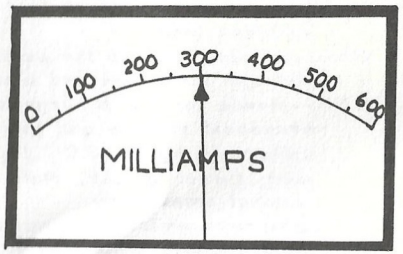
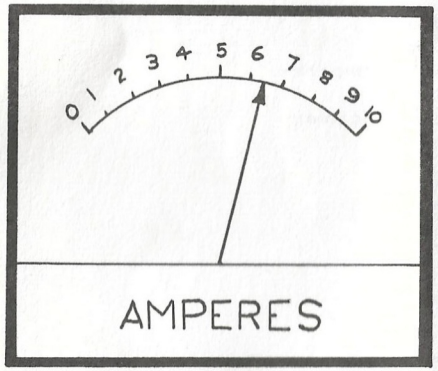
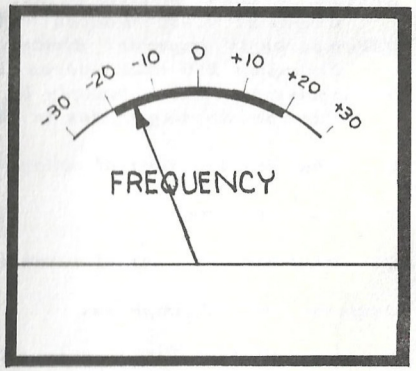


Plate Current



Antenna Current Meter



Frequency Monitor Meter

1) The antenna current meter reads 6.5 amps
2) The frequency monitor meter reads -15 cycles. This means that the transmitter frequency is 15 cycles lower than the authorized station operating frequency. This is a permissible value.
3) The modulation meter reads 85%.
4) The plate voltage meter reads 2.6 kilovolts or 2600 volts.
5) The plate current meter reads 300 milliamps or 0.3 amps.

Q. When the phrase "remote meter" is used in connection with radio equipment, what does it mean?

Even though the antenna may be some distance from the transmitter, a remote antenna current meter, which is mounted near the operator, lets one monitor the antenna current from where the operator sits. So in general, a remote meter measures voltage or current from equipment that is actually in another location.

Q. What should an operator do if the remote antenna ammeter, or any other meter, becomes defective?

Call the first class operator. Remote antenna current meters and remote common-point meters are not always required; they merely give the operator a better idea how the equipment is performing. The operator should have another meter ordered and in the meantime, record the antenna base current meter (or the common point meter) which is actually next to the antenna once a day.

Q. What should an operator do if the remote control devices at a station so equipped malfunction?

If a remote control device malfunctions, then operation must cease immediately and operation at the actual control point at the transmitter must begin.

Q. When should a "daytime operation" broadcast station cease its operations?

At local sunset.

Q. What does modulation mean?

When no one is speaking over the microphone and the transmitter is on, or activated, it is transmitting a radio wave of constant power. This wave is called the "carrier." When the microphone is spoken into, the carrier wave is modified in a definite manner. It is this variation which contains the message. The louder you speak into the microphone, the larger is the modification of the carrier wave. It is this modification of the carrier wave that is called modulation.

Q. What does percent modulation mean?

Each transmitter is designed for a maximum microphone signal that it can transmit. If there is no microphone signal, the modulation is zero. If the maximum microphone signal is used, then the modulation is 100%. If only $\frac{1}{2}$ of the maximum microphone signal is used, then the modulation is 50%, etc. So the higher the modulation, the louder the received signal.

Q. What is the maximum legally allowable percentage of modulation?

100%. If the percentage of modulation is higher than 100%, the transmitted and the received signal will be distorted and interference may be caused to other stations.

Q. What level of modulation must be maintained to insure high quality communication?

The modulation must be maintained as high as possible but not more than 100%. This will assure a louder and clearer received signal. In general, the modulation should average 85%. This applies to both AM and FM stations.

Q. What does AM and FM mean?

As was mentioned before, a microphone signal modulates the carrier wave, but the modulation is accomplished differently for AM and FM. AM stands for "amplitude modulation." Amplitude means strength, so in AM, the strength of the signal is changed during modulation. AM stations are not permitted to broadcast FM.

FM stands for "frequency modulation." During modulation, the frequency of the transmitted signal is quickly varied. FM stations are not allowed to broadcast AM.

Q. What are the frequencies for AM stations? FM stations?

AM: 535 to 1605 kilocycles
FM: 88 to 108 megacycles

Q. What are the permissible frequency tolerances of AM stations? For FM stations?

AM: 20 cycles
FM: 2000 cycles

Q. What stations is the holder of the FCC Third Class License with Broadcast endorsement entitled to operate?

1) AM stations with a power of 10 kilowatts or less which do not have directional antennas.
2) FM stations of 25 kilowatts or less transmitter output power.

Q. Basically, what are you authorized to do?

You are authorized to turn the transmitter on and off and make small power corrections.

Q. What is the tolerance for the transmitted power?

Legally, the power can be any value from 90% to 105% of the authorized output power. This is 10% below and 5% above. Of course, you try to maintain the authorized power.

Q. If for some reason the transmitter must be operated at reduced power (below 90%) what must the operator do?

The transmitter may be operated at reduced power for ten days as is stipulated by the Commission. Also, the Engineer in Charge of the FCC of the district in which the station is located must be notified with the details.

Q. If the third class operator has questions about the equipment, who should he talk to?

The first class operator.

Q. Transmitter meters should be entered into the log how often?

In at least thirty minute intervals.

Q. If the third class operator cannot correct for under or over power or if the frequency of the station is not within its tolerances, what should he do?

He should remove the station from the air and call the first class operator. As a licensed operator, your most important duty is to be sure that the transmitter is operating correctly.

Q. What logs must be kept by broadcast stations according to the Rules and Regulations of the FCC?

There are three logs that must be kept:
1) The Program Log
2) The Operating Log
3) The Maintenance Log

Q. What kinds of entries are made in the program log?

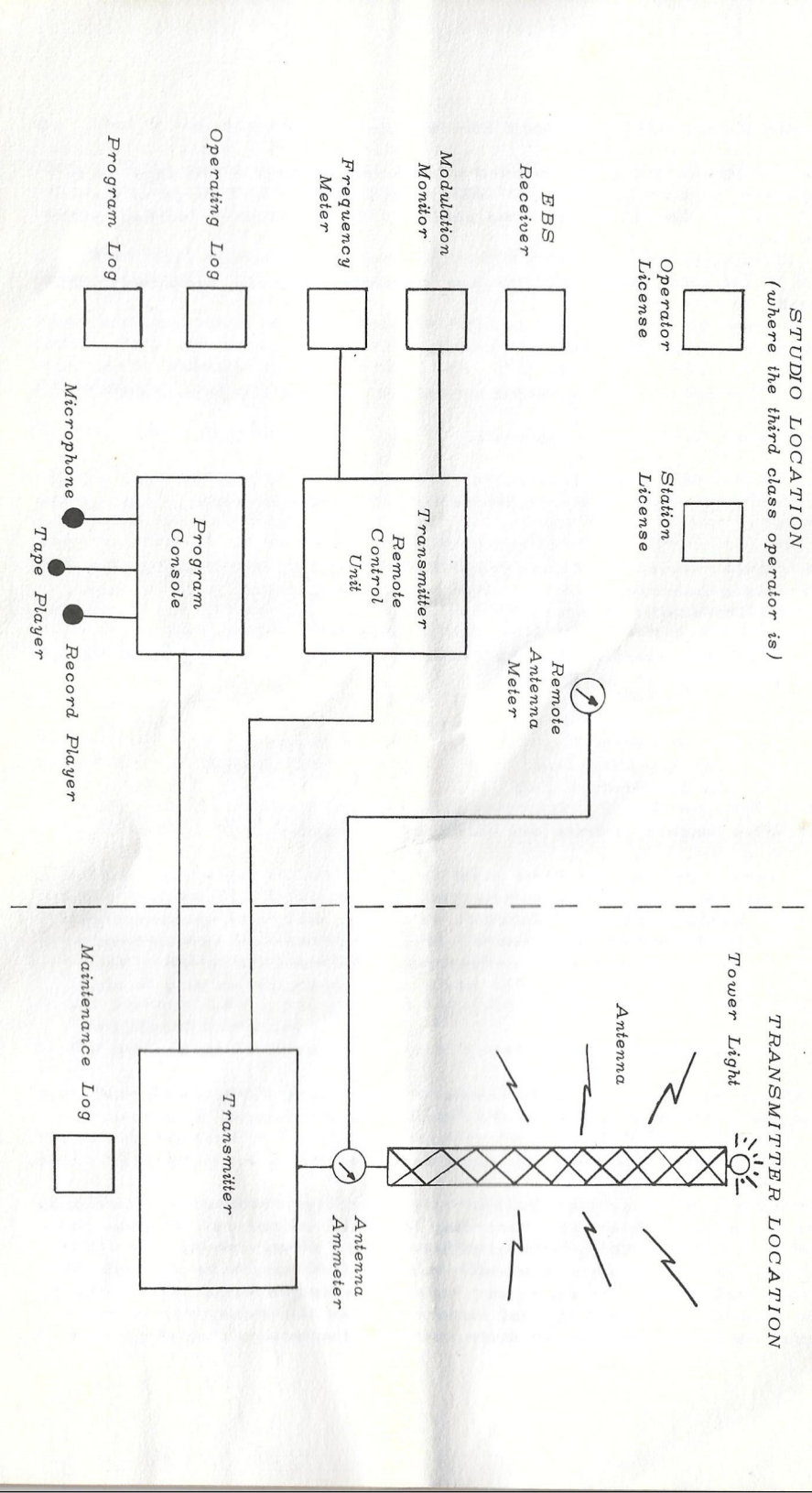
For each program, the name must be given, the beginning and ending time; whether it is news, commercial, sports, an ID, music, a public service announcement, educational, religious, etc.; the sponsor should be given including all contributors. For programs that have commercials in them, the time each commercial is run and the length of the commercial is necessary. The name of the operator on duty is also required.

Q. What does ID stand for?

A station identification. It is normally given every thirty minutes. A correct identification is "This is WAFB-FM, Baton Rouge, Louisiana."

Q. What kinds of entries are made in the operating log?

Entries are make as soon as the transmitter begins radiating power and then in half hour intervals, recording the plate voltage and the plate current of the transmitter power amplifier stage. Other entries are the antenna current, frequency monitor readings, antenna base currents for certain installations, output power meters, and some extra readings that are required at certain special stations. When the transmitter is interrupted by power failures or other reasons, the time of the interruption



is logged unless the transmitter reset itself. If an engineer other than the one on duty logs the interruption, he initials his entry. The time of the daily observation of the tower lights and the name of the operator on duty is also required.

Q. Who makes the entries on the logs?

The logs are kept by the person or persons competent to do so, having knowledge of the facts required, who shall sign the appropriate log when starting duty and again when going off duty. These apply to the program and the operating log.

Q. When may abbreviations be used in the station's logs?

Abbreviations and letters or symbols may be used on the logs if they are clearly explained elsewhere on the log.

Q. How and by whom may station logs be corrected?

Corrections are made by the person making the original entry. It is made by drawing a line through the erroneous entry and correcting it, initialing it and dating it.

Q. According to the Rules and Regulations of the FCC, how long must station logs be kept?

Two years. Logs during disaster times during which the station operated other than was authorized must be kept until the Commission does in writing say that they may be destroyed. Logs which may be involved in a legal dispute must be kept until the time allowable to file suits is legally over (the statute of limitations).

Q. What information must be given an FCC inspector at any reasonable hour?

All the three logs, the equipment performance measurements that are required, a copy of the most recent antenna resistance measurement or common point measurement, and a copy of the most recent field intensity measurements to establish performance of directional antennas.

Q. What is included in a station identification and how often is it given?

An ID gives the call letters and the location of the station (the city and state). They are given at the beginning and the end of the period of broadcasting and on the hour in between. They are also required either on each half hour or at the quarter after and the quarter till each hour. For plays, lectures over 30 minutes, etc., where an ID would interrupt, an ID at the beginning and at the first break or opportunity will be sufficient. For ball games over thirty minutes, ID's must be made within five minutes of each hour.

Q. What should an operator do if the modulation monitor becomes defective?

He should notify the first class operator who will record on the log the time the monitor was removed from service and the time when the pro-

perly functioning unit was returned to service. The Engineer in Charge of the FCC district in which the station is located must be notified immediately after each of these times. Also, the modulation must be monitored by another approved instrument until the defective modulation monitor is repaired or replaced.

Q. What should an operator do if the frequency monitor becomes defective?

He should first notify the first class operator. The Engineer in Charge of the FCC district that the station is in should be notified, an entry should be placed in the maintenance log indicating the time the monitor was removed from service. The frequency of the station must be measured by another acceptable method frequently enough to insure that the frequency of the station is within the tolerances allowed. When the repaired or new unit is put back into service, the FCC should be advised and the maintenance log should show the time the unit was restored to service.

Q. When should minor corrections to the transmitter be made?

Minor corrections should be made whenever they are needed. When making meter readings, it is preferred that they be made during periods of no modulation. They should be recorded in the log before the minor corrections are made. The readings are normally required at thirty minute intervals.

Q. Should the sponsor's name ever be omitted when a commercial is "aired?"

No. Who paid in part, or entirely, must be clearly stated.

Q. When should an operator announce a program as "recorded?"

It should be announced as recorded when any program longer than one minute would lead the listener to believe that the program was "live" when it actually was mechanically reproduced, such as tapes, records, or films or transcriptions. An announcement should preceed and follow the program.

Q. How often should tower lights be checked for proper operation?

Once every 24 hours by visual observation or by remote indicator.

Q. What record is kept of tower light operation?

If the lights are turned on manually, the operating log should have the times the lights were turned on and off. If the lights are automatically turned on, one observation each night is necessary with the time of the observation.

Q. What should the operator do if the tower lights fail?

In the event of failures for over 30 minutes, the Federal Aviation Agency (FAA) should be notified. The failure is to be corrected as soon as is possible. When the failure is corrected, the FAA should again be notified. The failures should be recorded in the operating log.

Q. What is EBS?

EBS stands for the Emergency Broadcasting System. (See the question where EBS was defined.)

Q. What is an Emergency Action Condition (EAC)?

The condition exists after the Emergency Action Notification and before the Emergency Action Termination notice. It is the time of peril.

Q. What equipment must be installed in broadcast stations in regard to reception of an Emergency Action Notification?

At the transmitter control point, the station must have a special radio receiver with an alarm, unless the station is exempt.

Q. How often should an EBS test transmission be sent? During what time period are they sent?

They should be made at regular intervals once each week between the hours of 8:30 a.m. and local sunset. The Commission should be notified according to each station's instructions in detail.

Q. Which stations should transmit EBS test messages?

All standard broadcast, FM and TV stations.

Q. During a period of an Emergency Action Condition, what should all non-participating stations do?

They will observe radio silence. Because this would be a period of national emergency, they will stop transmitting.

Q. If the tower lights of a station are required to be controlled by a light-sensitive device, and this device malfunctions, when should the tower lights be "on?"

The tower lights must burn continuously until the light-sensitive device is repaired or replaced.

A SAMPLE EXAMINATION

The following questions will help you to understand the material that you have just read. These questions are similar in nature and form to the actual FCC test questions. It should be pointed out that the following questions are to be used as a guide. The answers are to be found in the back of the book.

1) The maximum penalty for violating a provision of the Communications Act is
   a) $500 a day during which the offense occurred.
   b) $10,000
   c) imprisonment for 1 year
   d) $10,000 and imprisonment for 1 year.

2) The maximum penalty for breaking an FCC Rule is
   a) $500 a day during which the offense occurred
   b) $10,000
   c) imprisonment for 1 year
   d) $10,000 and imprisonment for 1 year.

3) Radio stations are inspected by the
   a) FAA
   b) EBS
   c) FCC
   d) EAN

4) After what period of time is it impossible to renew an expired license?
   a) 2 years
   b) 5 years
   c) 1 year
   d) none of the above

5) To rebroadcast a message which was received from another station, the rebroadcasting station must have
   a) good lawyers
   b) a tape recorder. Permission is not needed.
   c) an EBS receiver
   d) the permission of the originating station.

6) If an operator loses his license, he should
   a) forget it
   b) wait until the end of his 5 year period and try to renew it
   c) write his congressman
   d) apply for a duplicate and post a copy of the application.

7) Errors in the station logs should be corrected by
   a) the person owning the station
   b) one of the secretaries
   c) the first class engineer
   d) the one making the error.

8) Superfluous or unnecessary signals
   a) tie up the channel
   b) are unlawful
   c) are unprofessional
   d) all the above.

9) If an operator receives a notice that he has violated an FCC Rule, he has _____ days to reply.
   a) 10
   b) 15
   c) 30
   d) 360

10) If an operator receives a notice that his license is suspended, he has _____ days to apply for a hearing.
   a) 10
   b) 15
   c) 30
   d) 360

11) The radio operator's license is issued for
   a) 1 year
   b) 5 years
   c) 10 years
   d) indefinitely.

12) Clear means:
   a) The weather is good
   b) my transmission is over and I expect a response
   c) my transmission is over and I do not expect a response
   d) I will comply with your request.

13) The top priority message is
   a) an urgent message
   b) a government message
   c) an EBS test message
   d) a distress message.

14) The second priority message is
   a) an urgent message
   b) a government message
   c) an EBS test message
   d) a distress message.

15) Obstruction marking and lighting details for a tower of a station are found in the
   a) operating log
   b) station authorization papers
   c) third class operator's permit
   d) proof of performance papers.

16) A guest speaker uses profane language on the air without warning the operator. Who is responsible?
   a) the guest speaker
   b) the first class operator
   c) the station licensee
   d) the operator on duty.

17) During an emergency, a radio operator may violate certain rules and terms of the station license
a) in order to broadcast commercial announcements
*b) to give emergency notification to the public
c) to make routine newscasts
d) none of the above.

18) When separating parts of a message, the operator says:
a) period
b) out
*c) break
d) over.

19) Shouting in the microphone will
a) give a clearer signal
b) give a louder, clearer signal
c) make up for a noisy location of the microphone.
*d) distort the signal badly.

20) When using a microphone in a noisy location, the operator should
a) shout into the microphone
b) turn the microphone gain up
c) not worry about it
*d) cup his hands over the microphone.

21) A third class radio operator may make transmitter repairs and frequency adjustments
a) if the first class operator is not available
b) if the station licensee has given his permission
*c) under no circumstances
d) when he is by himself.

22) A third class radio operator may
a) turn the transmitter on
b) turn the transmitter off
c) make minor power variation corrections
*d) all the above.

23) When in doubt on anything regarding technical matters,
a) go to the station licensee
b) do whatever seems best to you
*c) go to the first class operator or the FCC Rules
d) send a telegram to the FAA.

24) "Daytime" is
*a) local sunrise to local sunset
b) 6 am to 6 pm
c) 5 am to 5 pm
d) not defined.

25) An AM station can broadcast FM
a) during nighttime hours
b) during emergencies only
*c) under no circumstances
d) during an EBS alert.

26) When taking a meter reading, the operator finds the plate current is a little high, he should
a) reduce the corrent to the proper value and take the reading
*b) take the reading, then reduce the current
c) increase the modulation
d) ignore the meter reading.

27) The operator should post his license
*a) at the studio location
b) at the transmitter location
*c) in the room where the transmitter is actually controlled
d) none of the above.

28) During a continuous program such as a play or religious service, if it would interrupt the program to make the ID, the operator should
a) interrupt the program
*b) give the ID at the first interruption or logical opportunity
c) call the first class operator
d) remove the station from the air.

29) The station ID should contain
a) the call letters
b) the city
c) the state
*d) all the above.

30) If the operator believes that any piece of equipment is not working properly, he should
a) pretend he did not notice it
b) log it using the value is should be
c) forget it
*d) call the first class operator immdeiately.

31) Corrections to the log is accomplished by
a) completely scratching it out
b) neatly erasing it
*c) putting one line through the error, initialing it and dating it
d) pasting the correct reading on the top of the error.

32) If a transmitter remote control unit malfunctions, the operator
a) should hope for the best
b) should ignore it
c) should notify the first class operator
*d) should shut the transmitter off, then notify the first class operator.

33. If the automatic device for turning on the tower lights malfunctions, the tower lights should
a) be turned on when it gets dark
b) be flashed on and off by hand
c) be left "out" until the trouble is corrected
*d) burn continuously.

34) The frequency meter reads 25 cycles high for an AM station. The operator should
a) ignore and log it because it is within the tolerance
b) adjust the frequency knob on the transmitter to within ±20 cycles
*c) remove the transmitter from the air and call the first class oper-

ator.
d) make an announcement on the air.

35) Which is not one of the three generally kept station logs?
a) operating log
b) maintenance log
*c) commercial log
d) program log.

36) The time when the transmitter just begins supplying power to the antenna should be entered in the
a) maintenance log
b) program log
*c) operating log
d) none of the above.

You should contact the FCC field office nearest you for exam details: Address letters to: Engineer in Charge, Federal Communications Commission:

Alabama, Mobile 36602
Alaska, Anchorage (Box644) 99501
California, Los Angeles 90014
California, San Diego 92101
California, San Francisco 94111
Colorado, Denver 80202
California, San Pedro 90731
D.C., Washington 20554
Floride, Miami 33130
Florida, Tampa 33602
Georgia, Atlanta 30303
Georgia, Sevannah (Box77) 31402
Hawaii, Honolulu 96808
Louisiana, New Orleans 70130
Maryland, Baltimore 21202
Massachusetts, Boston 02109
Michigan, Detroit 48226
Minnesota, St. Paul 55102
Missouri, Kansas City 64106
New York, Buffalo 14203
New York, New York 10014
Oregon, Portland 97205
Pennsylvania, Philadelphia 19106
Texas, Dallas 75202
Texas, Beaumont 77701
Texas, Houston 77002
Washington, Seattle 98104
Virginia, Norfolk 23510

SOLUTION TO SAMPLE QUESTIONS:

1.d	11.b	21.c	31.c
2.a	12.c	22.d	32.d
3.c	13.d	23.c	33.d
4.c	14.a	24.a	34.c
5.d	15.b	25.c	35.c
6.d	16.d	26.b	36.c
7.d	17.b	27.c	
8.d	18.c	28.b	
9.a	19.d	29.d	
10.b	20.d	30.d	

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